

# UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION N	0. 1	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/774,788	02/09/2004 Chow-Shing Shin		Chow-Shing Shin	386998047US	9048	
25096	7590	10/04/2005		EXAMINER		
PERKIN	S COIE LI	LP .	LEE, PATRICK J			
PATENT						
P.O. BOX	(1247		ART UNIT	PAPER NUMBER		
SEATTL	E, WA 98	111-1247	2878			
				DATE MAILED: 10/04/200	DATE MAILED: 10/04/2005	

Please find below and/or attached an Office communication concerning this application or proceeding.

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  Extensions of time reply a available under the proteined of 37 FR1.13(b). In no swent, may a reply be timely field  1 ft Do period for reply is specified above, the maximum statistics preprietd will apply and will expire SIX (6) MONTHS from the mailing date of this communication.  Fallur to reply which the sort or contended period for rejly is specified above, the maximum statistics preprietd will apply and will expire SIX (6) MONTHS from the mailing date of this communication, reply received by the Office later than the months affort the mailing date of this communication, even if similarly field, may reduce any carenter planel than 30µ function.  Fallur to reply which the sort or contended period for rejly will, by statuke, cause the application.  Fallur to reply which the sort or contended period for rejly will, by statuke, cause the application.  Fallur to reply which the sort or contended period for rejly will, by statuke, cause the application.  Fallur to reply which the sort or contended period for rejly will, by statuke, cause the application of the market of the communication, even if simply field, may reduce any carent planel.  Status  Status  1) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) Claim(s) 1-12 is/are pending in the application.  4) Claim(s) 1-12 is/are allowed.  6) Claim(s) 1-12 is/are allowed.  6) Claim(s) 1-12 is/are allowed.  7) Claim(s) 1-12 is/are allowed.  8) Claim(s) 1-12 is/are allowed.  9) The specification is objected to by the Examiner.  10) The drawing (s) field on 30 August 2005 is/are: a) accepted or b) objected to by the Examiner.  10) The specification is objected to by the Examiner.  10) The drawing(s) field on 30 August 2005 is/are: a) acce				H'A				
Examiner   Patrick J. Lee   2878	•	Application No.	Applicant(s)	·				
Petrick J. Lee  Patrick J. Lee  Petrick J. Lee	Office Action Summan	10/774,788	SHIN ET AL.					
- The MAILING DATE of this communication appears on the cover sheet with the correspondence address - Period for Reply  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  Extension from were be availated under the provision of 37°CF 1.13(a). In a row with, prover, may a reply be levely field  1 NO period for reply is accorded above, the maintaine studyor priends of a epipication is become ARMONDED 430°JC. S 13.3.  A row reply welved by the Dilca later than these maintain attention maintained and the priends of a epipication is broad-ARMONDED 430°JC. S 13.3.  A reply welved by the Dilca later than these maintained the maining date of this communication, even if timely filed, may reduce any secretal application than explanation.  **Status**  **Status**  **Status**  **Status**  **Status**  **Status**  **Status**  **Application is FINAL 20) This action is non-final.  3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  **Disposition of Claims**  4) Claim(s) ½ 22 displace 2 larger elected.  7) Claim(s) ½ 22 displace 2 larger elected.  7) Claim(s) ½ 22 displace 2 larger elected.  7) Claim(s) ½ 22 displace 2 larger elected.  8) Claim(s) ½ 22 displace 2 larger elected.  8) Claim(s) ½ 22 displace 2 larger elected.  8) Claim(s) ½ 22 displace 2 larger elected.  9) The specification is objected to by the Examiner.  10) The drawing(s) filed on 30 August 2005 is/are: a) Saccepted or b) objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) objected to See 37 CFR 1.121(d).  11) The cath of reduceration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  **Priority under 35 U.S.C. §	Office Action Summary	Examiner	Art Unit					
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  - Esterializate of time may be available under the proteitizers of 37 CFR 1-158(s). In an averal, however, may a reply be timely filled.  - If No period to reply is specified bloom, the maximum exhibitory portion willay part will expire 14 (6) (8) MONTHS from the mailing date of this communication.  - Failure to reply within the set or extended period for reply will, by statistics the mailing date of the communication to reply its specified that the from them them them them them them them the	TI MANUAD DATE AS Alice and a single state of							
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  Etalensions of time may be available under the provisions of 37 CFN 1:306, in no event, however, may a reply be timely filled after SIX (8) MONTHS from the mailing date of this communication. Failurs to revy which the earl or extended period for eight of the provision of the communication of the provision of th	The MAILING DATE of this communication a Period for Reply	ppears on the cover sneet	with the correspondence address	•				
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Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) All b) Some * c) None of:  1. Certified copies of the priority documents have been received.  2. Certified copies of the priority documents have been received in Application No.  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.  Attachment(s)  1) Notice of References Cited (PTO-892)  2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)	9) The specification is objected to by the Exami	ner.						
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11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) ☐ All b) ☐ Some * c) ☐ None of:  1. ☐ Certified copies of the priority documents have been received.  2. ☐ Certified copies of the priority documents have been received in Application No  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.  Attachment(s)  1) ☑ Notice of References Cited (PTO-892)  2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  5) ☐ Notice of Informal Patent Application (PTO-152)								
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a) All b) Some * c) None of:  1. Certified copies of the priority documents have been received.  2. Certified copies of the priority documents have been received in Application No  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.  Attachment(s)  1) Notice of References Cited (PTO-892)  2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  1. Interview Summary (PTO-413) Paper No(s)/Mail Date  5) Notice of Informal Patent Application (PTO-152)	Priority under 35 U.S.C. § 119							
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2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date Notice of Informal Patent Application (PTO-152)	Attachment(s)	.  A) [] Interview	y Summary (PTO-413)					
	<ul> <li>2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/0</li> </ul>	Paper N 5) Notice o	o(s)/Mail Date f Informal Patent Application (PTO-152)					

#### **DETAILED ACTION**

#### Response to Amendment

1. This action is in response to amendment filed August 30<sup>th</sup>, 2005.

#### **Drawings**

2. The drawings were received on 8/30/2005. These drawings are acceptable.

### Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
- 4. Claims 19 & 21-22 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,876,786 B2 to Chliaguine et al.

With respect to claim 19, Chliaguine et al discloses a fiber grating sensor system comprising: sensitive elements (20) as long period fiber grating for sensing physical quantities (see column 5, lines 61-66); light source (31) as a narrow band light source (see column 7, lines 9-13; column 13, lines 1-2); and photodetector (32) as a light energy-measuring assembly to measure light wave energy.

With respect to claim 21, Chliaguine et al discloses photodetector (32) as converting modulated transmitted light energy into a voltage signal proportional to the physical quantities measured.

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With respect to claim 22, Chliaguine et al disclose light source (31) to be a laser diode of a fixed narrow band source (see column 7, lines 9-13).

# Claim Rejections - 35 USC § 103

- 5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 6. Claims 20 & 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,876,786 B2 to Chliaguine et al in view of "A torsion sensor made of a corrugated long period fibre grating" to Wang et al.

Chliaguine et al disclose the device as described in the discussion of claims 19 & 21-22.

With respect to claim 20, Chliaguine et al does not explicitly disclose the use of a corrugated force long period fiber grating, but such is disclosed by Wang et al. Such would have been obvious to one of ordinary skill in the art because such would allow for increased ability of the device to be resistant to EM radiation and operate in an electrically passive manner.

With respect to claim 27, the modified Chliaguine et al does not explicitly disclose the channeling of a portion of light energy by coupler (40) so that the measured result will not be affected by variation, but such would have been obvious to one of ordinary skill in the art because such would improve the detective capabilities of the device.

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# Allowable Subject Matter

7. Claims 1-18 are allowable over the prior art.

8. Claims 23-26 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject

matter:

9.

With respect to claims 1 & 10, US 6,876,786 B2 to Chliaguine et al and US

5,945,666 to Kersey et al disclose the use of long period gratings, but do not disclose

the use of a coupler such that light reflected from fiber Bragg gratings are input into long

period fiber gratings. US 6,822,218 B2 to Helmig et al discloses the grating (9)

disposed after coupler (2), but does not disclose nor suggest the use of LPG for grating

(9). As a result, independent claims 1 & 10 and dependent claims 2-9 & 11-18 are

allowable.

With respect to claim 23, the teachings of Chliaguine et al do not disclose nor

suggest the use of a WDM and an EDF. As a result, claim 23 and dependent claims

24-26 are objected.

Response to Arguments

10. Applicant's arguments with respect to claims 20-27 have been considered but are

moot in view of the new ground(s) of rejection.

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Conclusion

Page 5

11. Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-

2440. The examiner can normally be reached on Monday through Friday, 8:00 am to

5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Patrick J. Lee

Examiner

Art Unit 2878

PJL

September 19<sup>th</sup>, 2005

Stephone B. Allen

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Primary Examiner